ABSTRACT OF THE DISCLOSURE

An error diffusion method applied to halftone processing for image data. The image data comprise a plurality of pixels. The method comprising the steps of dividing the image data into a plurality of image blocks; selecting one of the pixels belonging to each of the image blocks as a target pixel, wherein the target pixel is located on the boundary of the corresponding image block; assigning a predicted error to the target pixel; and executing the error diffusion method on the rest of the pixels of the image blocks according to the predicted error of the target pixels of the image blocks. When the error diffusion is performed, target pixels are found in the image block and then predicted errors are assigned to the target pixels in order to calculate their output values. The target pixels are located at boundaries of the image blocks, and the predicted errors may be 0 or the transversal or longitudinal errors outputted from the pixels above the target pixels.

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